

## INFORMATION

# OIL AID-DA-90

### DIVERTING BALLS

#### DESCRIPTION

OIL AID-DA-90 is a group of perforation ball sealers that are used in acidizing, fracturing and other stimulation operations to effectively divert stimulation fluids to other sections of the formations. The balls are either solid rubber or consist of a core covered with an oil and temperature resistant rubber. They are available in several sizes and densities and are made of different materials for a variety of conditions. Table I gives the properties of the variety of ball sealers.

#### APPLICATION

OIL AID-DA-90 balls are introduced into the stimulation fluid between the pump and the well head through special ball injectors. They are carried by the fluid down the well where they seat in those perforations adjacent to the formation with the most permeability. This allows the stimulation fluid to be diverted to the formation of less permeability. Once set in the perforations, the balls are held in place by differential pressure. When the well is cleaned up or put on production, the balls are unseated by formation fluids and either fall to the bottom of the well or float to the surface for retrieval.

#### RECOMMENDED TREATMENT

Factors that determine which type of OIL AID-DA-90 ball to use are size, density, fluid temperature and differential pressure across the ball.

Perforation diameter indicates what size ball to use. The core should be at least 1/4" larger than the perforation to be plugged.

The density of the ball with respect to the fluid should be carefully considered. Generally, the balls should be heavier than the fluid so that they will fall to the bottom when released. In low velocity fluids, ball density should be only slightly heavier than the fluid, thus reducing the chances that the ball will fall past the perforations without seating. A higher viscosity helps ensure that the balls seat properly. If for some reason, the presence of balls at the bottom of the wells is objectionable, they can be recovered with a bailer or washed to the surface with a high flow rate.

Solid rubber balls and those with nylon cores are limited in temperature and pressure applications. Phenolic and aluminum core sealers can withstand temperatures of 375° F and differential pressures of 10,000 psi.

#### **HANDLING**

OILAIID-DA-40 can cause severe irritation to the eyes and skin, but should not cause any permanent damage. Gloves and goggles should be worn while handling.

#### **PACKAGING**

OILAIID-DA-90 is packaged 25 to the bag (20/bag for 1" and 1 1/4" balls). Order balls by the letter in Table I (i.e., OILAIID-DA-90A, OILAIID-DA-90B, etc).

OILAIID-DA-90 is a Messina trademark